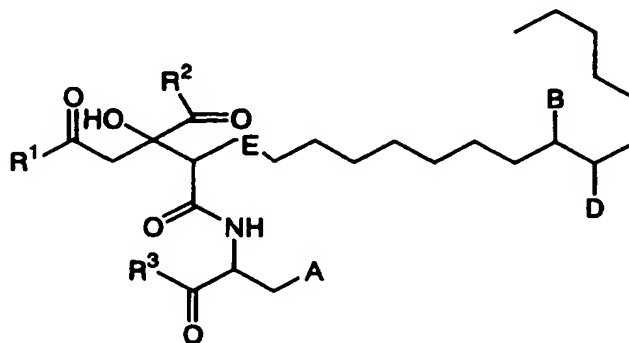


Claims

1. A pharmaceutical composition for preventing or treating viral infectious diseases comprising a compound represented by the following general formula (I):



5

(wherein

A represents a phenyl group substituted with -OX,
or a 3-indolyl group;

X represents a hydrogen atom, a linear or branched alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms, or a linear or branched alkynyl group having 2 to 8 carbon atoms;

B represents a hydrogen atom, a hydroxyl group, an
15 oxo group, $-N(R^4)(R^5)$, $=N-OH$, $=N-OR^6$ or a halogen atom;

R⁴ and R⁵ may be the same or different, and each represent a hydrogen atom, a linear or branched alkyl group having 1 to 6 carbon atoms, a linear or branched alkenyl group having 2 to 6 carbon atoms, or a linear or branched alkynyl group having 2 to 6 carbon atoms, or R⁴ and R⁵ together represent a 3 to 8 membered ring;

R⁶ represents a linear or branched alkyl group having 1 to 8 carbon atoms (which may be substituted with an amino group which may be mono- or di-substituted with a linear or branched alkyl group having 1 to 4 carbon atoms);

D represents a hydrogen atom or a hydroxyl group;

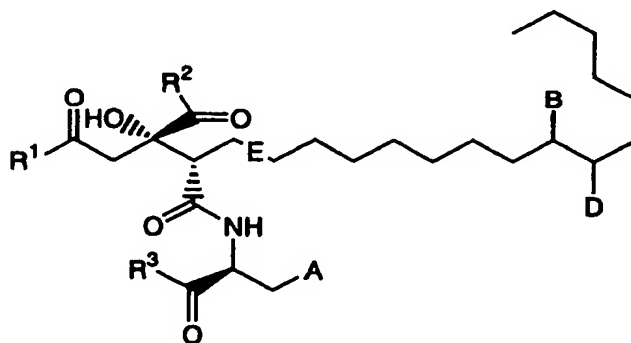
bond E represents a single bond or double bond;

R^1 , R^2 and R^3 may be the same or different, and each

represent a hydrogen atom, a hydroxyl group, an amino group (which may be mono- or di-substituted with a linear or branched alkyl group having 1 to 4 carbon atoms), -OZ, a linear or branched alkyl group having 1 to 4 carbon atoms, a linear or branched alkenyl group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms; and,

Z represents a linear or branched alkyl group having 1 to 4 carbon atoms, a linear or branched alkenyl group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms) a prodrug thereof or a pharmaceutically acceptable salt thereof.

15 2. The pharmaceutical composition according to claim 1
comprising the compound of formula (I) according to claim
1 represented by the following general formula (I'), a
prodrug thereof or a pharmaceutically acceptable salt
thereof:



(wherein A, B, D, bond E, R¹, R² and R³ are the same as defined in claim 1).

3. The pharmaceutical composition according to claim 1
25 or 2 comprising a compound of formula (I), a prodrug
thereof or a pharmaceutically acceptable salt thereof
wherein A represents a phenyl group substituted with -OX
at position 4, X represents a hydrogen atom, a linear or

branched alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms, or a linear or branched alkynyl group having 2 to 8 carbon atoms.

5

4. The pharmaceutical composition according to any one of claims 1 to 3 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein B represents an oxo group, a hydrogen
10 atom, a hydroxyl group or =N-OR⁶.

5. The pharmaceutical composition according to any one of claims 1 to 4 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt
15 thereof, wherein R¹, R² and R³ may be the same or different and each represent a hydroxyl group, an amino group, or -OZ (wherein Z represents a linear or branched alkyl group having 1 to 4 carbon atoms).

20 6. The pharmaceutical composition according to claim 1 or 2 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein A represents a phenyl group substituted with -OX at position 4, X represents a hydrogen atom, a linear or
25 branched alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms or a linear or branched alkynyl group having 2 to 8 carbon atoms, B represents an oxo group, a hydroxyl group or =N-OR⁶, and R¹, R² and R³ may be the same or different and
30 each represent a hydroxyl group or -OZ (wherein Z represents a linear or branched alkyl group having 1 to 4 carbon atoms).

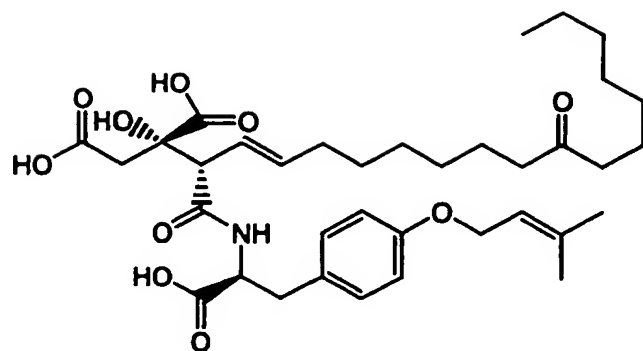
7. The pharmaceutical composition according to claim 6
35 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein X

represents a linear or branched alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms or a linear or branched alkynyl group having 2 to 8 carbon atoms, B represents an oxo group or a hydroxyl group, and R¹, R² and R³ each represent a hydroxyl group.

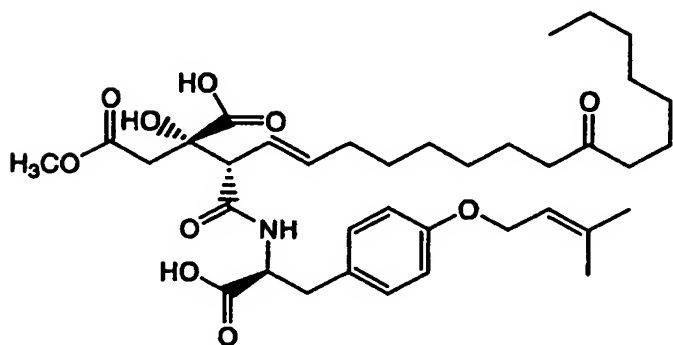
8. The pharmaceutical composition according to claim 1 or 2 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein A represents a 3-indolyl group.

9. The pharmaceutical composition according to claim 8 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein B represents an oxo group or a hydroxyl group, and R¹, R² and R³ each represent a hydroxyl group.

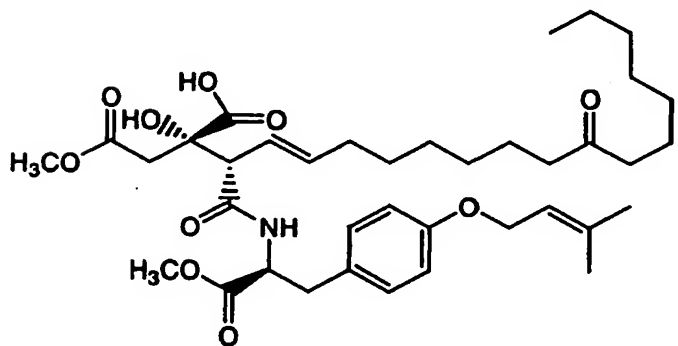
10. The pharmaceutical composition according to claim 1 or 2 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, selected from the compounds indicated below.



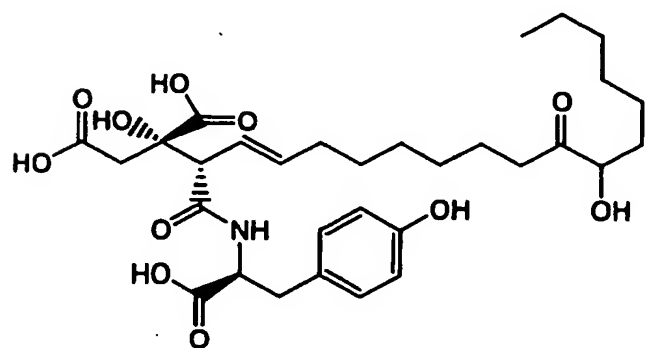
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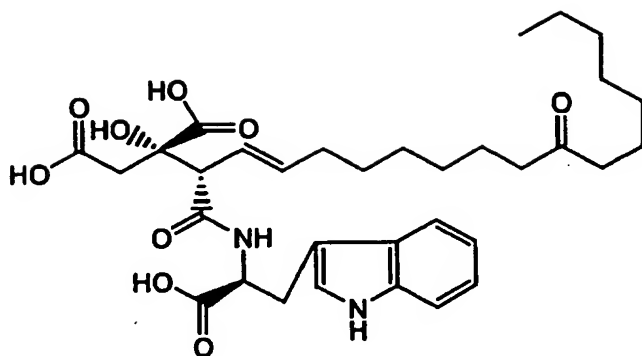
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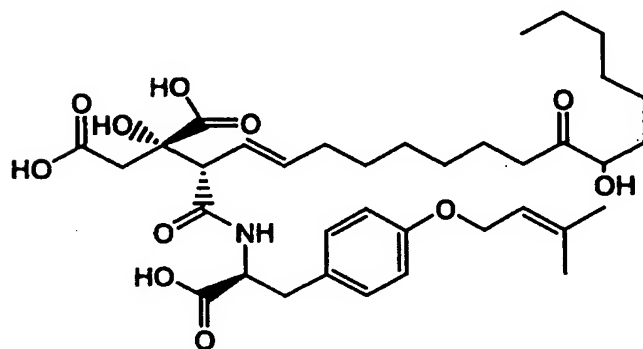
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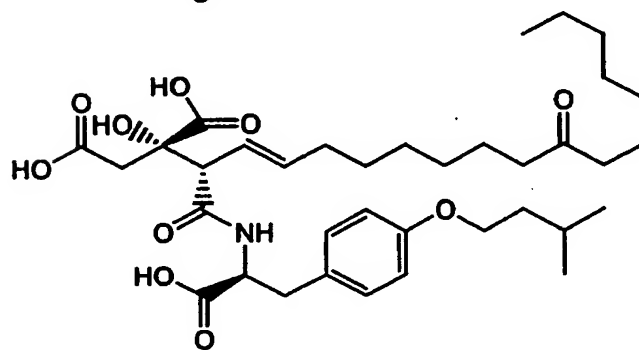
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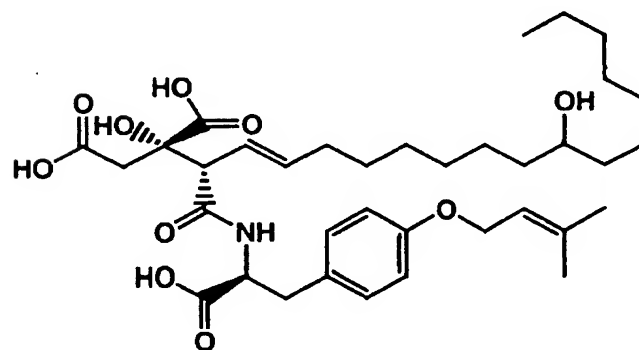
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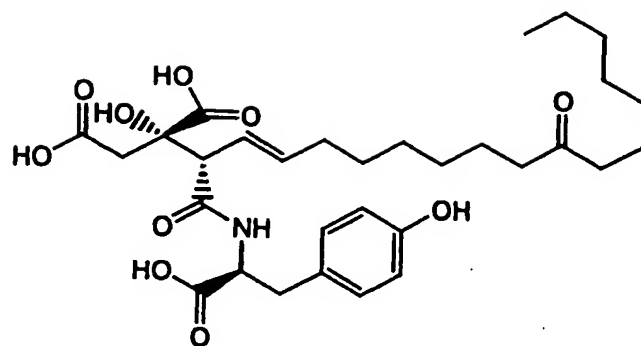
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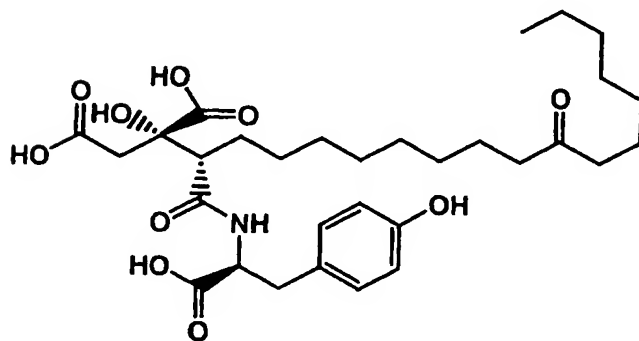
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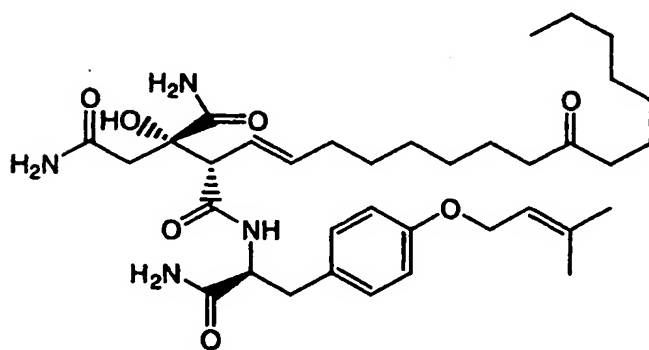
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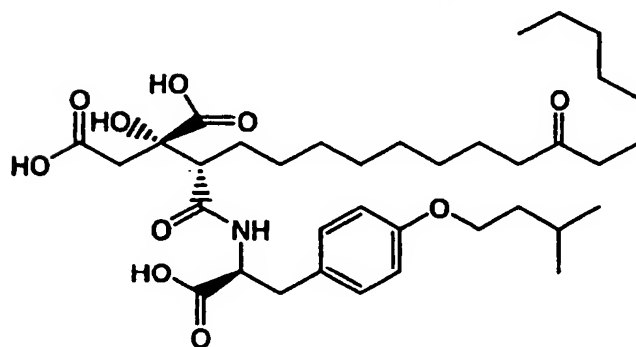
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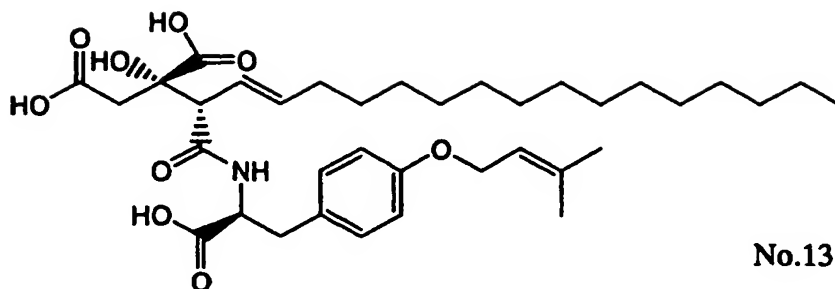
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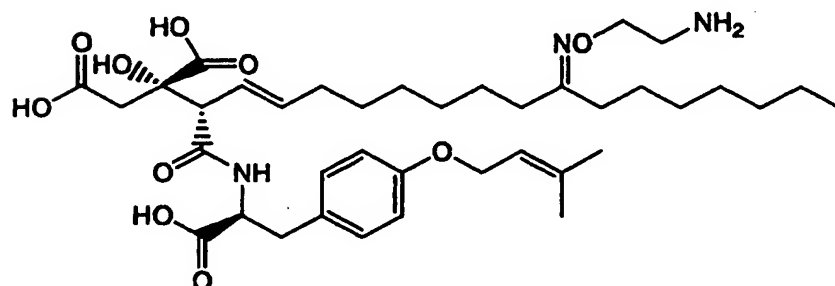
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No.12

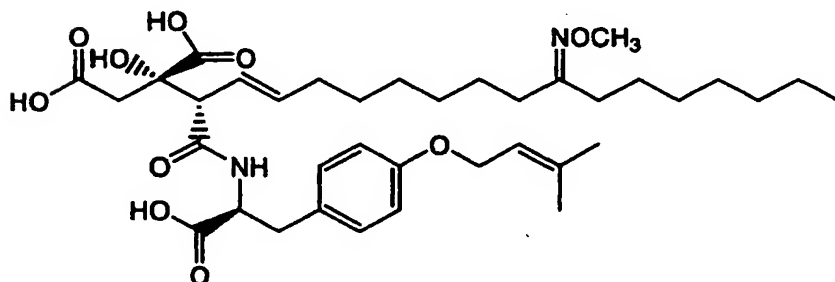


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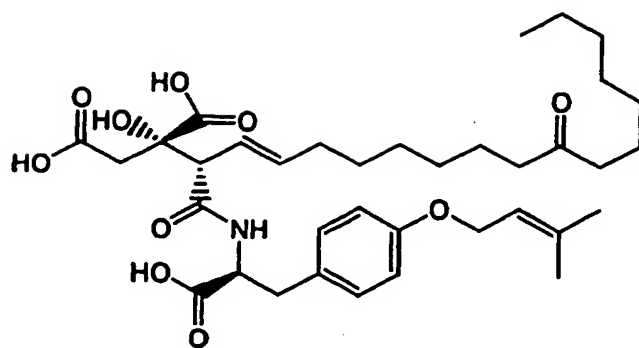
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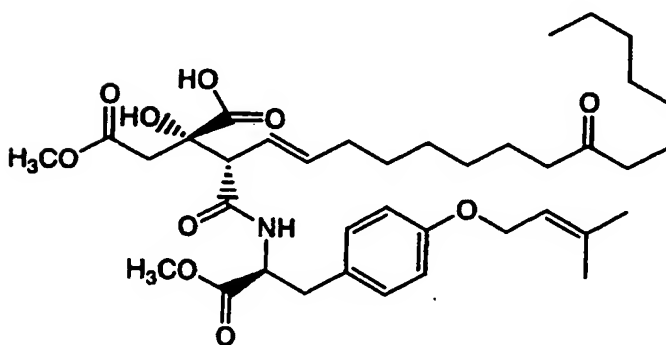


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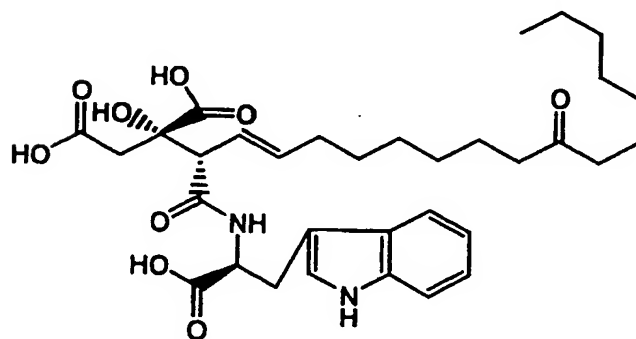
11. The pharmaceutical composition according to claim 1 or 2 comprising a compound of formula (I), a prodrug thereof or a pharmaceutically acceptable salt thereof, selected from the compounds indicated below.



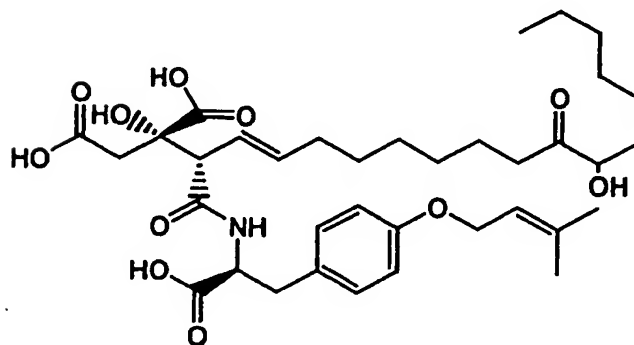
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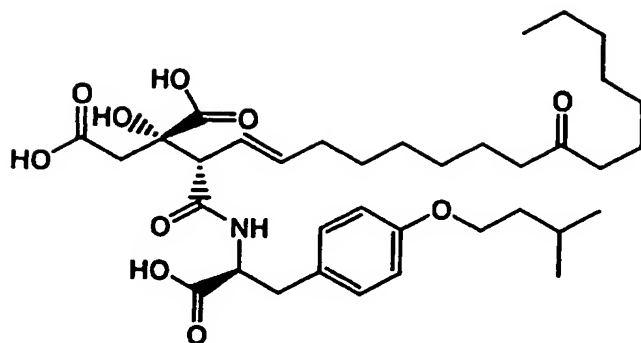
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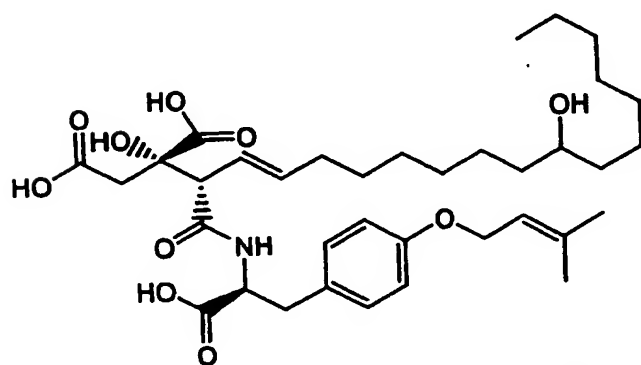
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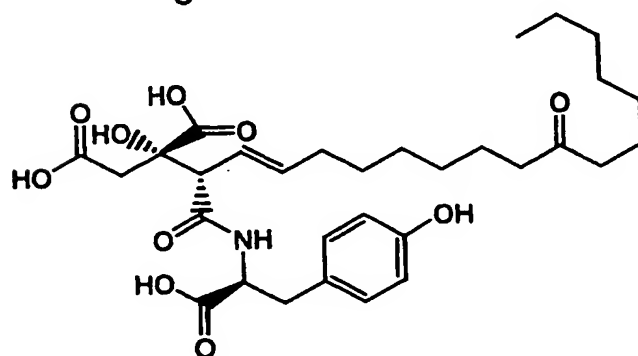
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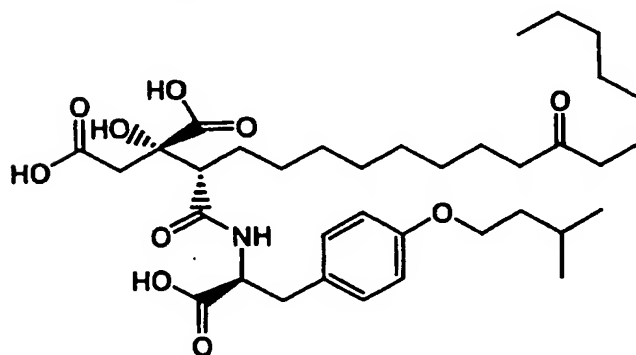
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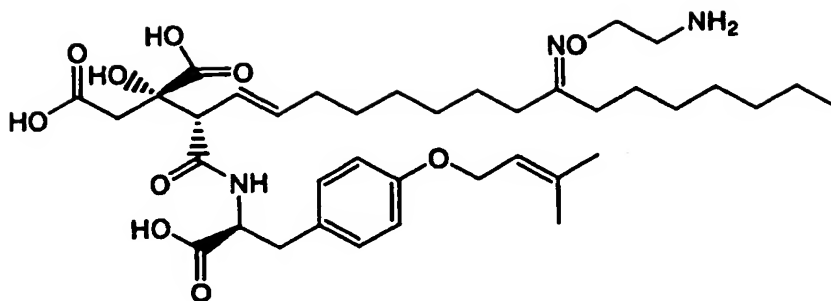
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No.9

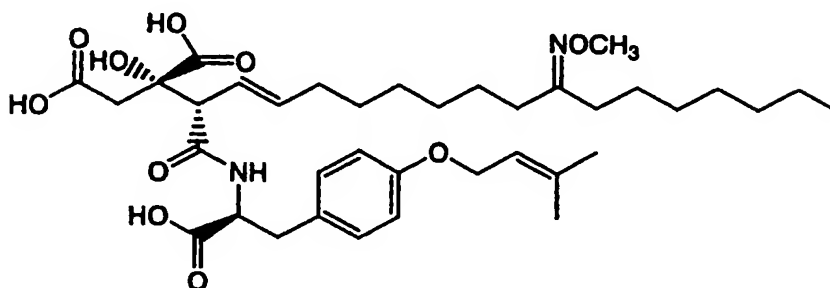


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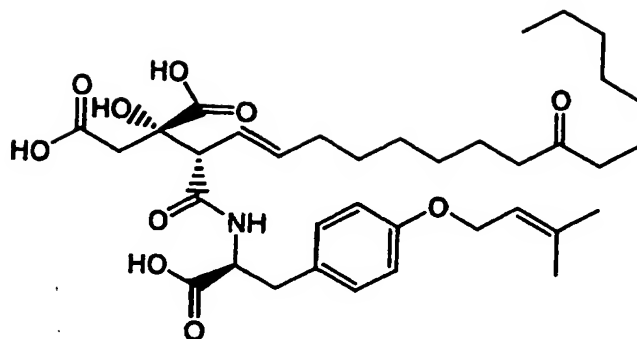
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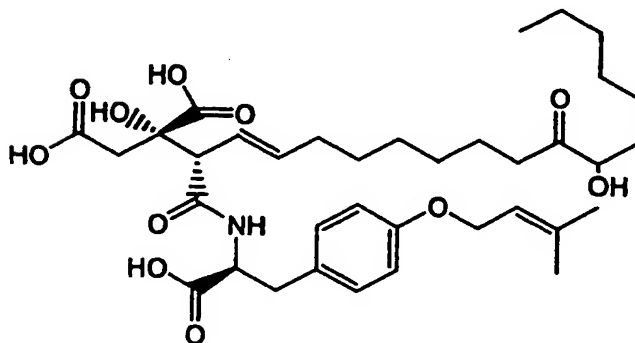


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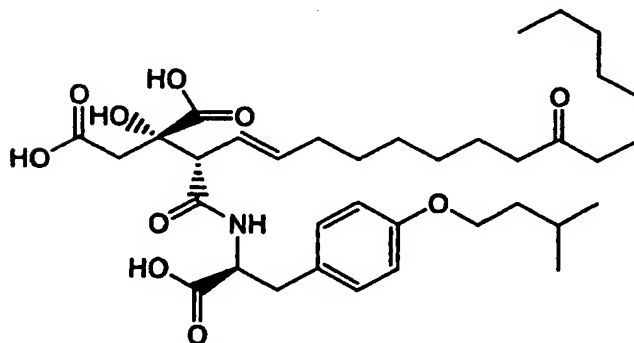
12. The pharmaceutical composition according to claim 1
or 2 comprising a compound of formula (I), a prodrug
5 thereof or a pharmaceutically acceptable salt thereof,
selected from the compounds indicated below.



No.1

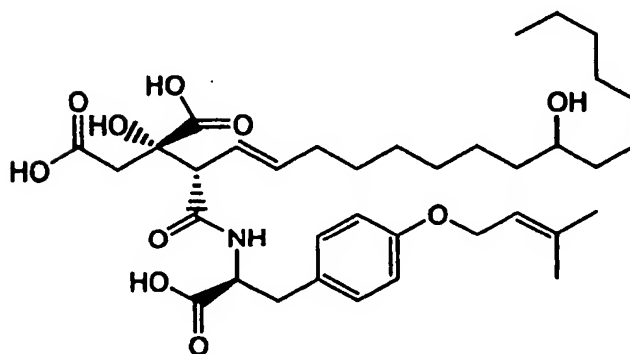


No.6



No.7

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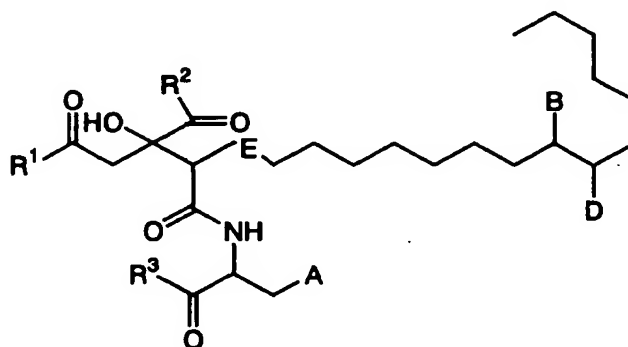


No.8

13. The pharmaceutical composition according to any one
of claims 1 to 12, wherein the viral infectious disease is
5 HCV infection.

14. The pharmaceutical composition according to claim 13, wherein the HCV infection is hepatitis C.

15. A compound represented by the following general
5 formula (I):



(wherein

A represents a phenyl group substituted with -OX;

X represents a hydrogen atom, a linear or branched
10 alkyl group having 1 to 8 carbon atoms, a linear or
branched alkenyl group having 2 to 8 carbon atoms, or a
linear or branched alkynyl group having 2 to 8 carbon
atoms;

B represents a hydrogen atom, a hydroxyl group, an
15 oxo group, -N(R⁴)(R⁵), =N-OH, =N-OR⁶ or a halogen atom;

R⁴ and R⁵ may be the same or different, and each
represent a hydrogen atom, a linear or branched alkyl
group having 1 to 6 carbon atoms, a linear or branched
alkenyl group having 2 to 6 carbon atoms, or a linear or
20 branched alkynyl group having 2 to 6 carbon atoms, or R⁴
and R⁵ together represent a 3 to 8 membered ring;

R⁶ represents a linear or branched alkyl group
having 1 to 8 carbon atoms (which may be substituted with
an amino group which may be mono- or di-substituted with a
25 linear or branched alkyl group having 1 to 4 carbon
atoms);

D represents a hydrogen atom or a hydroxyl group;

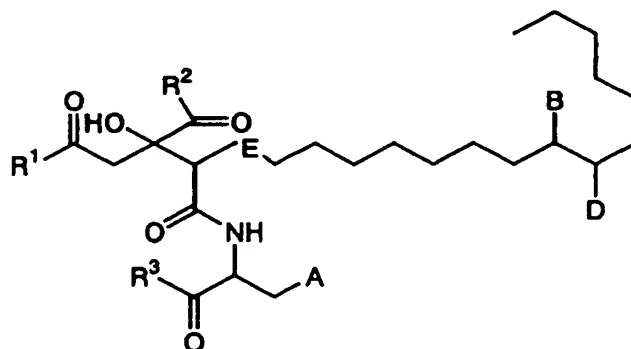
bond E represents a single bond or double bond;

R¹, R² and R³ may be the same or different, and each

represent a hydrogen atom, a hydroxyl group, an amino group (which may be mono- or di-substituted with a linear or branched alkyl group having 1 to 4 carbon atoms), -OZ, a linear or branched alkyl group having 1 to 4 carbon atoms, a linear or branched alkenyl group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms; and,

Z represents a linear or branched alkyl group having 1 to 4 carbon atoms, a linear or branched alkenyl group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms, with the proviso that the case in which A is a phenyl group substituted with -OX at the p position, X is a 2-isopentenyl group or a hydrogen atom, B is an oxo group, D is a hydrogen atom, E represents a double bond, and all of R¹ to R³ are a hydroxyl group, and the case in which A is a phenyl group substituted with -OX at position p, X is a 2-isopentenyl group, B is an oxo group, D is a hydrogen atom, bond E represents a double bond, and all of R¹ to R³ are a methoxy group are excluded) a prodrug thereof or a pharmaceutically acceptable salt thereof.

16. A compound represented by the following general formula (I):



(wherein

A represents a phenyl group substituted with -OX;
X represents a hydrogen atom, a linear or branched

alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms, or a linear or branched alkynyl group having 2 to 8 carbon atoms;

5 B represents a hydrogen atom, a hydroxyl group, an oxo group, $-N(R^4)(R^5)$, $=N-OH$, $=N-OR^6$ or a halogen atom;

R^4 and R^5 may be the same or different, and each represent a hydrogen atom, a linear or branched alkyl group having 1 to 6 carbon atoms, a linear or branched
10 alkenyl group having 2 to 6 carbon atoms, or a linear or branched alkynyl group having 2 to 6 carbon atoms, or R^4 and R^5 together represent a 3 to 8 membered ring;

R^6 represents a linear or branched alkyl group having 1 to 8 carbon atoms (which may be substituted with
15 an amino group which may be mono- or di-substituted with a linear or branched alkyl group having 1 to 4 carbon atoms);

 D represents a hydrogen atom or a hydroxyl group;

 bond E represents a single bond or double bond;

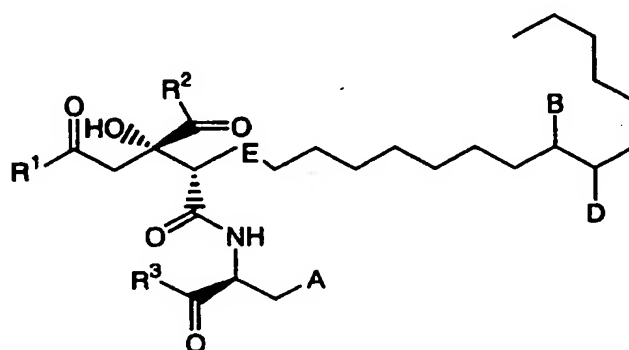
20 R^1 , R^2 and R^3 may be the same or different, and each represent a hydrogen atom, a hydroxyl group, an amino group (which may be mono- or di-substituted with a linear or branched alkyl group having 1 to 4 carbon atoms), $-OZ$, a linear or branched alkyl group having 1 to 4 carbon
25 atoms, a linear or branched alkenyl group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms; and,

 Z represents a linear or branched alkyl group having 1 to 4 carbon atoms, a linear or branched alkenyl
30 group having 2 to 4 carbon atoms, or a linear or branched alkynyl group having 2 to 4 carbon atoms, with the proviso that the case in which A is a phenyl group substituted with $-OX$ at position p and X is a hydrogen atom, and the case in which A is a phenyl group substituted with $-OX$ at
35 position p, X is a 2-isopentenyl group, B is an oxo group, D is a hydrogen atom, bond E indicates a double bond, and

all of R¹ to R³ are a hydroxyl group or a methoxy group are excluded)
a prodrug thereof or a pharmaceutically acceptable salt thereof.

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17. The compound of formula (I) according to claim 15 or 16 represented by the following general formula (I'), a prodrug thereof or a pharmaceutically acceptable salt thereof:



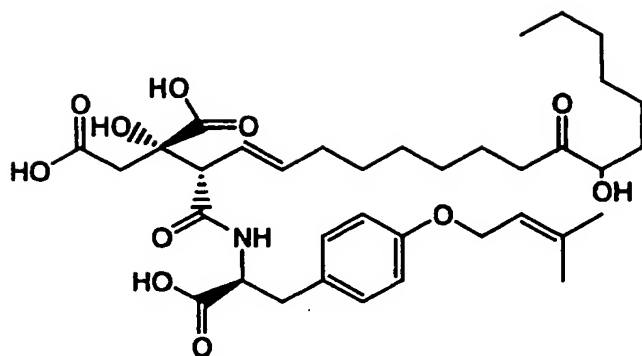
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(wherein X, B, D, bond E, R¹, R² and R³ are the same as described in claim 15).

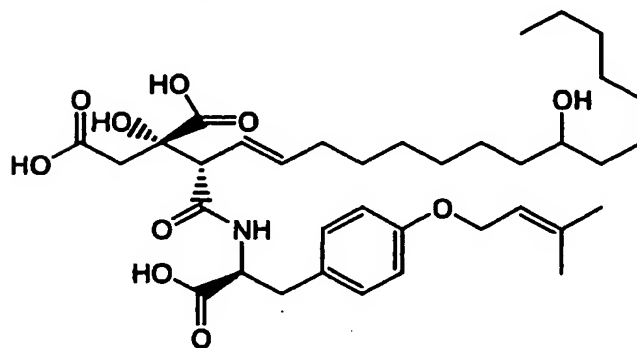
18. The compound of formula (I) according to claims 15 to 17, a prodrug thereof or a pharmaceutically acceptable salt thereof, wherein X represents a linear or branched alkyl group having 1 to 8 carbon atoms, a linear or branched alkenyl group having 2 to 8 carbon atoms or a linear or branched alkynyl group having 2 to 8 carbon atoms, and B represents a hydroxyl group, an oxo group or =N-OR⁶.

19. The compound of formula (I) according to any one of claims 15 to 18 represented by the following formula, a prodrug thereof or a pharmaceutically acceptable salt thereof.

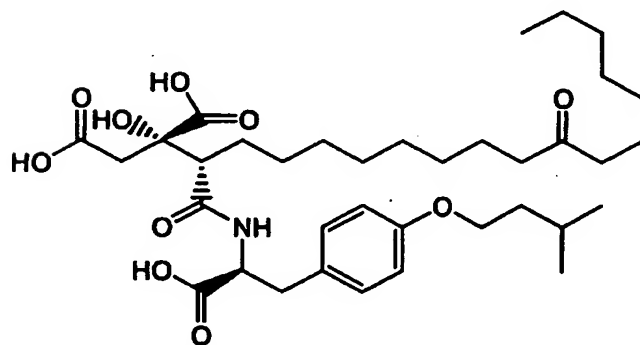
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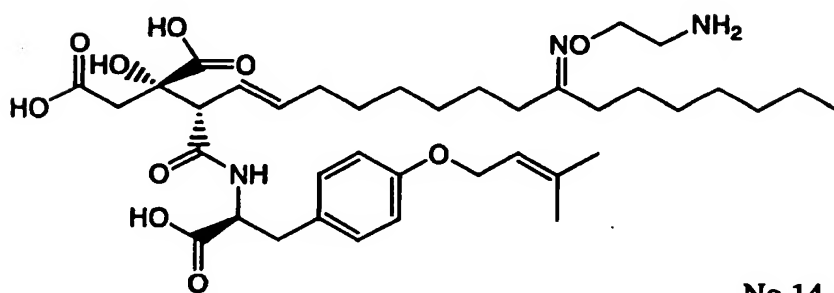
No.6



No.8

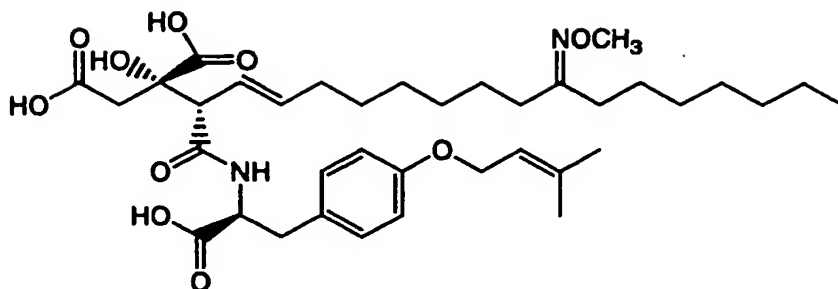


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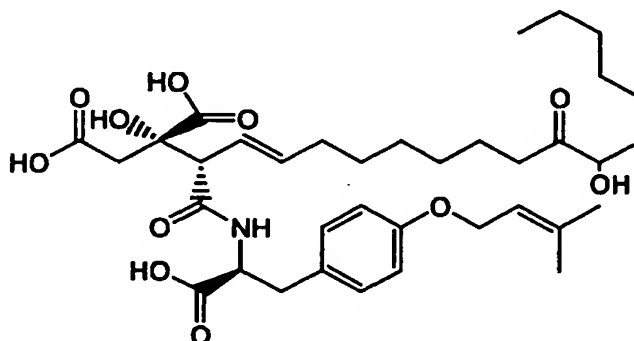
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or



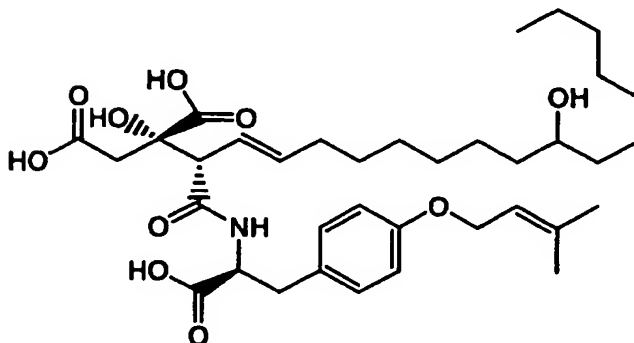
No.15

20. The compound of formula (I) according to any one of
claims 15 to 18 represented by the following formula, a
5 prodrug thereof or a pharmaceutically acceptable salt
thereof.



No.6

or



No.8

21. A pharmaceutical composition comprising a compound
10 of formula (I) according to any one of claims 15 to 20, a
prodrug thereof or a pharmaceutically acceptable salt
thereof.

22. The pharmaceutical composition according to claim

21 for preventing or treating of viral infectious diseases.

23. The pharmaceutical composition according to claim
22, wherein the viral infectious disease is HCV infection.

5

24. The pharmaceutical composition according to claim
23, wherein the HCV infection is hepatitis C.